RESEARCH BRIEF

Redistribution through Markets

Based on BFI Working Paper No. 2018-16, "Redistribution through Markets," by Piotr Dworczak, Chicago Research Fellow at the Becker Friedman Institute for Economics, Scott Duke Kominers of Harvard, and Mohammad Akbarpour of Stanford

KEY TAKEAWAYS

- ✓ When direct redistribution isn't possible, policymakers can still address income inequality through the design of individual markets
- ✓ A welfare-maximizing social planner might prefer a marketplace design that gives up some allocative efficiency in exchange for sharing more surplus with the impoverished
- ✓ The optimal policy uses some combination of price controls with rationing and price wedges with lump-sum redistribution

In many markets, sellers are poorer than buyers. Rideshare drivers, for example, often have far lower incomes than their riders do. Renters are typically poorer than property owners. How should we structure such markets? Standard economic intuition suggests that they're no different from other settings – the best thing to do is just to set the market-clearing price. But a new BFI Working Paper by Piotr Dworczak, a current Chicago Research Fellow at the Becker Friedman Institute, and two former Chicago Research Fellows – Scott Duke Kominers of Harvard and Mohammad Akbarpour of Stanford – suggests that might not always be the right choice.

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WHEN

Substantial inequality between buyers and sellers occurs

OPTIMAL MECHANISM

Imposes a wedge between buyer and seller prices, passing on the resulting surplus to the poorer side of the market.

WHEN

Significant inequality among sellers occurs

OPTIMAL MECHANISM

Imposes price controls even though doing so induces rationing. There is asymmetry, however: price controls are never optimal on the buyer side.

When sellers are desperate for cash, they are willing to sell at low prices. This means that the market-clearing price will be low, too. But from a social perspective, the poorer sellers are, the more money we want them to get through the market, all else equal.

Of course, everything isn't equal: if we artificially inflate prices above the market-clearing level, then some socially valuable trades don't happen – and due to rationing, some of the sellers who actually sell aren't the socially optimal ones. Even so, as Dworczak, Kominers, and Akbarpour highlight, the social value of getting more money to the seller side of the market can sometimes outweigh the allocative inefficiency that arises from price constraints. When there are sufficiently many poor sellers, price controls can be a better policy than standard market pricing. Even better might be a "price wedge" in which buyers are charged high prices that are used in part to finance an aggregate transfer to the seller side of market.

Inequality among market participants is nothing new – but due to changes in technology and the income distribution, the gaps today are both more prevalent and wider than before.

So how should we design markets in ways that improve the distribution of wealth, while still aiding the allocation of goods and services? Dworczak, Kominers, and Akbarpour show that – at least in relatively simple goods markets – a combination of price floors and price wedges are all you need.

The authors' analysis has applications to both labor and goods markets, and contributes insights into current policy discussion surrounding wealth inequality.

How market design can address inequality

Wealth inequality is on many policymakers' minds these days. To combat it, we often consider schemes in which income can be redistributed by the government, such as through taxes or other plans. However, there are many frictions inherent in implementing comprehensive redistribution; hence, policymakers sometimes also seek to mitigate inequality at the level of individual markets. (For example, we use rent controls or housing subsidies to respond to wealth disparities between renters and owners.)

Dworczak, Kominers, and Akbarpour examine how best to design individual goods markets in the presence of wealth inequality. They assume that the designer has preferences over the eventual wealth distribution, and requires market-clearing (goods are just traded – they aren't created or destroyed). They also insist that participation be voluntary (buyers and sellers must at worst break even), the marketplace be self-financing (no external subsidies are required), and traders be treated symmetrically (the designer cannot offer a better deal to agents based on their identity).

What do they find? The optimal marketplace design involves some combination of the two instruments described earlier: price controls and price wedges.

Price wedges are the optimal response to the "cross-side" inequality that arises when sellers are poorer than buyers (or vice versa). In that setting, the buyers and sellers face different prices, and the gap between the prices is essentially a "transaction tax" that is used to finance a lump sum transfer to all the agents on the poorer side (irrespective of whether those agents trade). This means, for example, that the socially optimal design of a rideshare platform might involve using the already existing gap between rider and driver prices to finance health and/or vehicle insurance for all the drivers.

However, there might also be "same-side" inequality – that is, differences in wealth among participants on a single side of the market. Rideshare driving is a full-time job for some, but others might drive just to make their car payments tax deductible as business expenses. So how can we increase the income of poor sellers without subsidizing the rich ones?

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All else equal, poor sellers are going to sell more frequently than rich ones because they value money more relative to the good or service they are providing. This means that if we increase the seller price, we are helping the poorer sellers more than the richer ones; the result is that price controls become optimal. This approach doesn't work on the buyer side, however, as the poorest buyers are the ones who buy the least frequently. (Lowering the price of rides for buyers most helps the wealthy people who take rideshare trips frequently.)

There's also the issue of entry. If people can sign on as drivers just to take advantage of company-provided insurance, that would bankrupt a system of lump-sum transfers. In that case, price wedges don't work – and the authors show that price controls are again the optimal strategy.

A key component of the authors' analysis is that the prospective buyers and sellers are characterized not just by how much they value goods, but also by how much they value money. This represents the idea that poorer agents have a higher marginal value for cash, all else equal, than rich agents do. (Prior mechanism design theory typically could not address wealth inequality directly because it assumed instead that all agents value money equally.)

In the authors' work, policymakers know the distributions of agents' characteristics in the population (e.g., they know the income distribution), but they do not know specific individuals' values for either the good or money. By implementing pricing mechanisms of the types the authors highlight, policymakers can use the market to redistribute money to poorer participants without needing to assess individuals' valuations directly.

Are markets the problem or the solution?

On the one hand, the idea that a price that is mutually accepted by a buyer and seller could somehow be "wrong" or "suboptimal" is anathema to economists. However, Dworczak, Kominers, and Akbarpour illustrate that when some people are so poor that they will take almost any price, the market can "clear" at prices that are socially suboptimal.

For critics, this reveals the inefficiency – and some would even say, injustice – of markets. The proper response, though, is not to ban or eliminate markets. Rather, we should design market-clearing mechanisms that address inequality directly.

As the authors write: "We may think of markets as serving two purposes simultaneously: they both allocate objects and transfer money among participants. From a social welfare perspective, sometimes it is worth distorting the allocative role to make better use of the transfer role." A welfare-maximizing social planner might prefer a marketplace design that gives up some allocative efficiency in exchange for sharing more surplus with the impoverished.

CLOSING TAKEAWAY

A welfare-maximizing social planner might prefer a marketplace design that gives up some allocative efficiency in exchange for sharing more surplus with the impoverished.

Conclusion

Wealth inequality is a central and growing problem in modern society. The authors' work highlights one way that markets may offer a solution: they can be used to redistribute income when more global redistributive instruments are not available.

- When there is substantial inequality between buyers and sellers, the optimal mechanism is to impose a wedge between buyer and seller prices, passing on the resulting surplus to the poorer side of the market.

- When there is significant inequality among sellers, the optimal mechanism imposes price controls even though doing so induces rationing. There is asymmetry, however: price controls are never optimal on the buyer side.

The authors' findings may thus partially justify the use of price controls and other market-distorting regulations in settings with substantial inequality. Additionally, the authors' highlights a way in which marketplaces like ridesharing platforms that bring together lower-income sellers with higher-income buyers may be used to create significant social value beyond their purely allocative impacts.

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